30

TRAINING FACILITIES IN CSIR LABORATORIES AND CO-OPERATIVE RESEARCH ASSOCIATIONS

(REVISED AUGUST 1976)

TECHNOLOGY UTILISATION
COUNCIL OF SCIENTIFIC & INDUSTRIAL RESEARCH
RAFI MARG, NEW DELHI-110001.
1976

90

TRAINING FACILITIES IN CSIR LABORATORIES AND CO-OPERATIVE RESEARCH ASSOCIATIONS

(REVISED AUGUST 1976)

TECHNOLOGY UTILISATION
COUNCIL OF SCIENTIFIC & INDUSTRIAL RESEARCH
RAFI MARG, NEW DELHI-110001.

1976

Printed by INSDOC, New Delhi-110012

INTRODUCTION

Research Laboratories of the Council of Scientific & Industrial Research (CSIR) and the Cooperative Research Associations, during the course of research activity during the last nearly 25 years, have acquired specialised facilities by way of equipment, pilot plant units and a well qualified and experienced scientific and engineering personnel. In view of these special advantages of men and materials, these laboratories also serve as centres for training in their specific fields to acquaint the trainees with the latest developments in the field as also provide working experience. CSIR Research Institutes and Co-operative Research Associations have different types of training programmes (a) Teaching programmes leading to higher degree or diploma (b) professional short term refresher courses for in-service personnel and technicians and (c) ad hoc trainings in specific areas to meet individual requirements.

This compilation prepared by Shri D. Bhushan and Mrs. Suhasini Ramachandran contains information regarding different training programmes indicating the name of the institution where the training is available, duration, fee and the preferential eligibility for admission. It is hoped that the compilation will serve to provide preliminary information for the location of suitable training of interest. For further details, the institutions concerned or the Chief, Technology Utilisation, CSIR, Rafi Marg, New Delhi 110001, could be contacted.

Baldev Singh
Chief, Technology Utilisation,
C.S.I.R.

CONTENTS

		Page Nos
A.	HIGHER TRAINING COURSES	1
B.	REFRESHER AND PROFESSIONAL COURSES	7
C.	AD HOC TRAININGS	23
	INDEX	35

Abbreviation used

ATIRA	Ahmedabad Textile Industry's Research Association, Ahmedabad-380015
BITM	Birla Industrial and Technological Museum, Calcutta-700019
BTRA	Bombay Textile Research Association, Bombay-400086
CBRI	Central Building Research Institute, Roorkee (U.P.)-247667
CDRI	Central Drug Research Institute, Lucknow-226001
CECRI	Central Electrochemical Research Institute, Karaikudi-623003
CFRI	Central Fuel Research Institute, Dhanbad-826001
CFTRI	Central Food Technological Research Institute, Mysore-570013
CGCRI	Central Glass & Ceramic Research Institute, Calcutta-700032
CIMPO	Central Indian Medicinal Plants Organisation, Regional Centre, Bangalore-560037
CLRI	Central Leather Research Institute, Madras-600020
CMERI	Central Mechanical Engineering Research Institute, Durgapur-713209
CMRS	Central Mining Research Station, Dhanbad-826001
CRI	Cement Research Institute of India, New Delhi-110049
CRRI	Central Road Research Institute, New Delhi-110020
CSIO	Central Scientific Instruments Organisation, Chandigarh-160020
CS&MCRI	Central Salt & Marine Chemicals Research Institute, Bhavnagar-364002
IIEM	Indian Institute of Experimental Medicines, Calcutta
IIP	Indian Institute of Petroleum, Dehra Dun-248005
IJIRA	Indian Jute Industries Research Association, Calcutta-700053
INSDOC	Indian National Scientific Documentation Centre, New Delhi-110012
IPIRI	Indian Plywood Industries Research Institute, Bangalore-560022
MERADO, Poona	Mechanical Engineering Research & Development Organisation, Poona-411008
NAL	National Aeronautical Laboratory, Bangalore-560017
NBG	National Botanic Gardens, Lucknow-226001
NCL	National Chemical Laboratory, Poona-411008
NEERI	National Environmental Engineering Research Institute, Nagpur-440020
NML	National Metallurgical Laboratory, Jamshedpur-831007
NGRI	National Geophysical Research Institute, Hyderabad-500007
NPL	National Physical Laboratory, New Delhi-110012
PID	Publications and Information Directorate, New Delhi-110012
Planning Grp.	Planning Group CSIR, Rafi Marg, New Delhi-110001
RRL(B)	Regional Research Laboratory, Bhubaneswar-751004 (Orissa)
RRL, Jammu	Regional Research Laboratory, Jammu-Tawi-180001
RRL, Jorhat	Regional Research Laboratory, Jorhat-785006
SASMIRA	Silk & Art Silk Mills Research Association, Bombay-400025
SERC	Structural Engineering Research Centre, Madras-600020
SITRA	The South India Textile Research Association, Coimbatore-641014
TRA	Tea Research Association, Jorhat-785008
VITM	Visvesvaraya Industrial and Technological Museum, Bangalore-560001
WRA	Wool Research Association, Bombay-400019.

A. HIGHER TRAINING COURSES

Higher Trainings are technical educational courses leading to a higher degree, diploma or certificate. The degree courses are undertaken in collaboration with an university according to approved curriculum and are governed by university rules in respect of eligibility, period, examination, fee etc. The diploma and certificate courses are carried out in accordance with conditions prescribed by the concerned institutions. These courses are recognised as specialised higher trainings in their respective fields for purpose of employment.

A. HIGHER TRAINING COURSES

(Degree/Diploma/Certificate)

S. No.	Title of Course	Institution	Period Fee	Eligibility
1	2	3	4	5
1	DOCTORATE DEGREE by research Chemistry and chemical technology	NCL	As per Rules of the University concerned	Employees of the Institute & Research Fellows.
	Food science	CFTRI		As per University regulations.
	Leather technology	CLRI		
	Tea science	Tocklai Experimental Station (TRA)		
	Textile physics	SITRA		
	Textile technology	SITRA		
	Industrial and social psychology	SITRA		
	Science	NAL IJIRA IIEM RRL Jammu RRL Jorhat		
2	Master degree in Chemistry and Chemical Technology	NCL (various universities)	As per University Rules	Employees of the Laboratory & Research Fellows
3	Post graduate course in food technology and food science	CFTRI (Mysore University)	2 years (4 semesters) Rs. 350/- per semester	Second class degree in Food Technology or Science with Chemistry or Agriculture or Dairy Technology
4	Post graduate (M. Tech.) course in leather technology	CLRI (Madras University)	As per University Rules	B. Tech. in Leather Technology

5	Post graduate (M.Sc.) course in textile & clothing	SASMIRA (SVT College of Home Science Bombay)	2 years	B.Sc. Home Science with Textile & Clothing as major subject from SNDT Women's University Bombay
6	Post graduate degree in science (M.Sc.) by research	SASMIRA	Rs.300/- per year	B.Sc. in Chemistry or Physics
7	Post graduate degree in textile technology by research	BTRA (Bombay University)	As per University rules	As per University regulations
8	Graduation course in leather technology (B.Tech.)	CLRI (Madras University)	As per University rules	Pre-university Examination of Madras University with Maths, Physics and Chemistry combination or equivalent

DOCUMENTATION

9	Documentation and reprography (Associateship Diploma)	INSDOC	1 year residential and 5 months non-residential for project reports. Rs.500/- (in two instalments)	At least a second class Master's degree. In case of deputed candidate a basic degree and good record of service

INSTRUMENTATION

10	Precision instrument technology (Diploma)	Indo-Swiss Training Centre, CSIO.	3 years (Residential course)	Matriculation/SSLC/Hr. Secondary or equivalent. Candidates having passed Pre-Engg/Intermediate in Science preferred. Age 16 to 19

1	2	3	4	5
11	Industrial electronics (Diploma)	Indo-Swiss Training Centre, CSIO.	1 year	Candidates who have passed three year Diploma Course
	MUSEOLOGY			
12	Practice school programme	BITM	6 months	Students of M.Sc.(Tech.) Museum studies Course of Birla Institute of Technology & Science, Pilani
13	Practical training in museum studies	BITM	7 days	Post graduate students of the Department of Museology, Calcutta University
	TEXTILE TECHNOLOGY			
14	Dyeing and finishing of wool- (certificate course)	SASMIRA	1 year (2 semesters) Thrice a week in the evening. Rs.325/- per semester plus Rs.125/- Deposit	B.Sc. with Chemistry as principal subject or a diploma in Textiles
		WRA	1 year (2 semesters) Rs.200/- per semester	B.Sc. with chemistry, Diploma in Textile chemistry

15	Man-made textile chemistry (DMTC Diploma)	SASMIRA	3 years (6 semesters) Rs.190/- per semester plus Rs.125/- Deposit	For 15 & 16 SSC pass or equivalent with English Mathematics Physics & Chemistry. Candidates with Inter-Science-Physics, Chemistry and Mathematics are eligible for admission to III Semester direct
16	Man-man textile technology (DMTT Diploma)	SASMIRA	3 years (6 semesters) Rs.190/-per semester plus Rs.125/- Deposit	
17	Marketing of textile (Diploma M. Text.)	SASMIRA	1 year (2 semesters) Thrice a week in the evening. Rs.435/- yearly. Rs.100/- Deposit.	SSC or equivalent having working experience of at least 4 years at middle or lower management levels in textile or allied industrial organisation
18	Textile management (Diploma Course)	SASMIRA	1 year (2 semesters) Thrice a week in the evening. Rs.435/- yearly. Rs.100/- Deposit	Graduate in Arts, Science, Commerce, Law or Diploma in Engg. or Technology
19	Textile management and marketing of man-made textile (Post-graduate Diploma)	SASMIRA	1 year (2 semesters) Rs.345/- per semester plus Rs.125/- Deposit	Graduate in Arts, Commerce, Law, Science, Engg. or Technology
20	Warp knitting of man-made textiles (Certificate course)	SASMIRA	1 year (2 semesters) Thrice a week in the evening. Rs.325/- per semester plus Rs.125/- Deposit	SSC Examination pass or equivalent
21	Weaving of man-made fibre fabrics (Certificate course)	SASMIRA	2 year (Twice a week in the evening) Rs.135/- per year plus Rs.125/- Deposit	SSC Examination pass or equivalent

1	2	3	4	5
22	Weft knitting of man-made textiles (Certificate course)	SASMIRA	1 year (2 semesters, thrice a week in the evening) Rs.325/- per semester plus Rs.125/- Deposit	SSC Examination pass or equivalent
23	Wet processing of man-made textiles (Post-Graduate Diploma)	SASMIRA	$1\frac{1}{2}$ years (3 semesters) Rs.190/- per semester plus Rs.175/- Deposit	Degree in Textile Chemistry or Textile Technology or M.Sc. in Organic or Physical Chemistry with Mathematics in Inter Science
24	Wet processing of man-made textiles (Certificate course)	SASMIRA	2 years (Twice a week in the evening) Rs.135/- per year plus Rs.125/- Deposit	SSC Examination pass or equivalent

B. REFRESHER AND PROFESSIONAL COURSES

Refresher and professional courses are organised periodically more or less on regular basis. Such courses are open for in-service personnel primarily to acquaint them with the latest technological development in their area of work and to train them in the modern specialised techniques. Trainings usually comprise lectures, discussions, demonstrations and practicals. In such courses preference is given to sponsored candidates with practical experience of working.

B. REFRESHER AND PROFESSIONAL COURSES

Sl. No.	Title of course	Institution	Period Fee	Eligibility
1	2	3	4	5
	CEMENT AND ALLIED TECHNOLOGY			
1	Application of colorimetric methods for rapid chemical analysis and quality control in cement plant.	CRI	6 days Rs.500/- for members Rs.800/- for others	Sponsored candidates from cement and allied industries and other relevant and interested organisations.
2	Concrete making materials - their testing and evaluation.	CRI	-ditto-	-ditto-
3	Concrete structures in cement plants - design and construction.	CRI	1 week - Fee variable	-ditto-
4	Concrete technology	CRI	1 week - Fee variable	-ditto-
5	Durability of concrete in industrial structures.	CRI	6 days Rs.500/- for members Rs.800/- for others	-ditto-
6	Energy conservation in cement plants.	CRI	-ditto-	-ditto-
7	Geological and raw materials investigations and mining practices in cement plants.	CRI	-ditto-	-ditto-
8	Limit state design in concrete technology.	CRI	-ditto-	-ditto-
9	Preventive maintenance in cement industry	CRI	10 days - Fee variable	-ditto-

10	Process control and instrumentation in cement plants.	CRI	6 days Rs.500/- for members Rs.800/- for other	-ditto-
11	Raw materials technology for cement manufacture	CRI	-ditto-	-ditto-
12	Refractory practice in cement industry	CRI	1 week - Fee variable	-ditto-
13	Technology of manufacture of clinker based cements utilising industrial wastes.	CRI	6 days Rs.500/- for members Rs.800/- for others	-ditto-

CIVIL ENGINEERING (ROADS)

14	Highway engineering - refresher course for senior Highway Engineers	CRRI	16 days - No fee	In service Highway Engineers - sponsored
15	Highway engineering - refresher course for junior Highway Engineers	CRRI	4 months No fee	In service Highway Engineers - sponsored
16	Traffic engineering and urban transportation planning	CRRI	2 months No fee	Engineers from Town Planning Departments - sponsored

COAL PROCESSING

17	Coal beneficiation - refresher course	CFRI	10 days Rs. 300/-	Preference to sponsored candidates

1	2	3	4	5
18	Coal carbonisation - refresher course	CFRI	10 days Rs. 300/-	Preference to sponsored candidates
19	Coal sampling and analysis - refresher course	CFRI	10 days Rs. 300/-	Preference to sponsored candidates
20	Gasification and gas purification - refresher course	CFRI	10 days Rs. 300/-	Preference to sponsored candidates
	ELECTRO-CHEMISTRY			
21	Corrosion and its prevention - refresher course	CECRI	5 weeks Rs.500/- Rs.100/- deposit	Bachelors degree in Physics, Chemistry, Metallurgy or Engineering. Preference to sponsored candidates
22	Electroplating - refresher course	CECRI	12 weeks Rs.500/- Rs.100/- deposit	Bachelors degree in Chemistry, Preference to sponsored candidates.
23	Storage battery technology-refresher course	CECRI	8 weeks Rs.500/- Rs.100/- deposit	Bachelors degree in Physics, Chemistry, Metallurgy or Engineering. Preference to sponsored candidates
	ENVIRONMENTAL ENGINEERING			
24	Air pollution control	NEERI	10 days Rs.400/- Industries Rs.300/- Govt. Orgns. Rs.100/- Educational Institutions	Science Graduates/Diploma in Engineering or Auxiliary Personnel
25	City refuge disposal	NEERI	3 days Rs.100/- Industries Rs. 75/- Govt. Orgns. Rs. 25/- Educational Institutions	Engineers/Auxiliary personnel

26	Environmental microbiology	NEERI	10 days Rs.400/- Industries Rs.300/- Govt. Orgns. Rs.100/- Educational Institutions	M.E. (P.H.E.)
27	Industrial waste treatment	NEERI	10 days Rs.400/- Industries Rs.300/- Govt. Orgns. Rs.100/- Educational Institutions	Plant Superintendents Plant Engineers and Chemists
28	Plastic plumbing	NEERI	2 days Rs.100/- Industries Rs. 75/- Govt. Orgns. Rs. 25/- Educational Institutions	Plumbers or Auxiliary personnel
29	Process design in waste treatment	NEERI	4 weeks Rs.500/- Industries Rs.375/- Govt. Orgns. Rs.125/- Educational Institutions	M.E.(P.H.E.) with 2 to 3 years experience
30	Sewage farming	NEERI	3 days Rs.100/- Industries Rs. 75/- Govt. Orgns. Rs. 25/- Educational Institutions	Engineers/Auxiliary personnel
31	Water and waste water analysis	NEERI	9 weeks Rs.800/- Industries Rs.600/- Govt. Orgns. Rs.200/- Educational Institutions	B.Sc./M.Sc. Chem., Biology, Working in field

1	2	3	4	5
	FOOD TECHNOLOGY			
32	Analysis, standardisation & quality control in food processing industry - short course	CFTRI	6 to 8 weeks Rs.300/-	Degree in Science, Engg. or Technology and 3 to 4 years experience in plant or R&D organisation
33	Cold storage of perishable products, meat, fish, poultry, fruit, vegetables, and dairy products - short course	CFTRI	8 weeks Rs. 300/-	Degree in Science, Engg. or Technology and 3 to 4 years experience in plant or R&D organisation
34	Cultivation of edible mushroom (a) short course b) intensive course	RRL, Jammu	a) 10 days Rs.25/- b) 3 months Fee negotiable	Sponsored candidates
35	Fish processing - short course	CFTRI	6 to 8 weeks Rs.300/-	Degree in Science, Engg. or Technology and 3 to 4 years experience in plant or R&D organisation
36	Flour milling and baking technology - short course	CFTRI	8 weeks Rs.300/-	-ditto-
37	Food microbiology - short course	CFTRI	6 weeks Rs.300/-	-ditto-
38	Food packaging - short course	CFTRI	6 to 8 weeks Rs.300/-	-ditto-
39	Fruit and vegetable technology - short course	CFTRI	8 weeks Rs.300/-	-ditto-

40	Home scale fruit preservation - short course	RRL, Jammu	3 weeks No fee, cost of raw material is charged	House wives preferably matriculates
41	Infestation control in food and pesticide residue analysis - short course	CFTRI	8 weeks Rs.300/-	Degree in Science, Engineering or Technology and 3 to 4 years experience in plant or R&D organisation
42	Processing and quality control of meat and poultry products - short course	CFTRI	8 weeks Rs.300/-	-ditto-
43	Rice technology - short course	CFTRI	6 to 8 weeks Rs.300/-	-ditto-
44	Technology for production of protein foods from oilseeds and pulses - short course	CFTRI	8 weeks Rs.300/-	-ditto-
	INSTRUMENTS			
45	EDTA and spectrophotometric techniques	CRI	2 weeks Fee variable	Sponsored by Cement and concerned organisation
	LEATHER TECHNOLOGY			
46	Maintenance of leather machinery	CLRI	3 months Rs.400/-	ITI qualified/experienced in tannery
47	Practical training in leather manufacture	CLRI	3 months Rs.400/-	Candidates with background knowledge in leather field and sponsored by industry preferred

1	2	3	4	5
48	Practical training in leather manufacture - apprentice-ship course	CLRI	1 year	Those who have completed degree/diploma course in leather technology. Govt. of India stipendiary trainees
49	Specialised course for foreign scholars	CLRI	3 to 12 months Rs.500/- p.m.	Foreign candidates - sponsored
50	Vacation programme in leather manufacture	CLRI	4 to 6 weeks No fee	Students of degree/diploma course in leather technology
	MECHANICAL ENGINEERING			
51	Advanced welding techno-logy	CMERI	10 days Rs. 225/-	Practising Engineers and scientists
52	Dimensional metrology and its engineering application	MERADO, Poona	1 week(evening course) Rs. 250/-	Candidates sponsored by industry
53	Engineering dimensional metrology	CMERI	1 week Rs.500/-	Scientists/Engineers from industries
54	Industrial testing	MERADO, Poona	2 weeks(evening course) Rs. 350/-	Candidates sponsored by industry
55	Material evaluation and testing	CMERI	1 week Rs. 300/-	Scientist/Engineers
56	Production management	MERADO, Poona	1 week Rs. 300/-	Candidates sponsored by industry - Middle Management cadre and Executive in supervisory level

MUSEOLOGY

57	Creative ability centre	BITM	1 year	Science students of high school from different states in Eastern India
58	Improvisation of Science apparatus	VITM	8-10 days	Science teachers of Karnataka State, sponsored
59	a) Teacher's training programme-I (preliminary)	BITM	8 days Free of charge	High School Science Teachers from different States in Eastern India and West Bengal
	b) Teacher's training programme-II(Advanced)	BITM	10 days	High School Science Teachers from different States in Eastern India
60	Work education training programme	BITM	8-10 days	School teachers engaged in teaching the students in "Work Education" as per new school syllabus

PETROLEUM PRODUCTS

61	Industrial lubrication	IIP	2-3 weeks to 1 year Rs. 200-500/- and in specific cases actual amount	Sponsored candidates from IOC, IPCL, EIL, Ordnance factories, Defence and other user organisations. Deputed candidates from foreign countries.
62	Petroleum refining and petro-chemicals	IIP	-ditto-	-ditto-
63	Utilisation of fuels and lubricants in automobile engines	IIP	-ditto-	-ditto-

1	2	3	4	5
	PHYSICS			
64	Precision measurement relating to mass and length	NPL	6 to 8 months No fee	Deputed by Weights and Measures departments of State Governments
65	Training in different branches of physics	NPL	Annually during vacations	Students from Engineering Institutions, Research Workers from NCERT, Unemployed Engineers deputed by Ministry of Education
	PLYWOOD TECHNOLOGY			
66	Plywood technology	IPIRI	6 months	Science graduates or Diploma/degree in Engg. - Sponsored candidates and one/two private candidates
	SALT MANUFACTURE			
67	Improvement in quality and yield of salt and recovery of mixed salt	CSMCRI	2 weeks	Candidates from salt works
68	Quality control class for salt manufacturers	CSMCRI	1 week	Graduate in Science. Relaxable in case of undergraduates having experience in manufacture and analysis of salt
	STRUCTURAL ENGINEERING			
69	Structural engineering and digital computation	SERC	Variable	In service design engineers and public and private sector's, sponsored
	TEA CULTIVATION AND PROCESSING			
70	Tea husbandry and technology	TRA	4 months	Employees of Tea Board and trainees from foreign countries

71	Vegetative propogation of tea	TRA	3 months	Employees of Member Tea Estates
	TEXTILE TECHNOLOGY			
72	Analysis and testing - chemical testing	ATIRA	21 days Rs.1000/-	Laboratory chemists (Member Mills)
73	Analytical testing of man-made textiles	SASMIRA	4 months (once a week) Rs.200/-	Mill technicians on Supervisory level
74	Basic marketing	SASMIRA	2 weeks Rs.250/-	Junior executive in Marketing
75	Causes and remedies of some specific weaving defects.	ATIRA	2 days Rs.240/-*	Supervisors, assistants in weaving (Member Mills)
76	Control of count variation	ATIRA	$1\frac{1}{2}$ days Rs.180/-*	Senior Assistants (Member Mills)
77	Control of temperature and relative humidity in textile mills	ATIRA	$3\frac{1}{2}$ days Rs.300/-*	Engineering supervisors (Member Mills)
78	Correct grinding of metallic wire card clothing	ATIRA	1 day Rs.120/-*	Senior assistants, maintenance incharge (Member Mills)
79	Costing in textiles	SITRA	1 week Rs.400/-*	Accountants, Accounts Assistant from Textile Mills
80	Cost reduction	SITRA	3 days Rs.200/-*	Office managers and accountants in Textile Mills
81	Cotton selectors training	SITRA	2 weeks Rs.1000/-*	Staff employed in cotton selection and purchase

1	2	3	4	5
82	Dyeing of man-made fibre blends	SASMIRA	8 weeks (Twice a week) Rs.150/-	Employees from Textile Mills, preferably SSC
83	Electronic data processing with case study in sales analysis	ATIRA	3 days Rs.360/-*	Industrial Engineers, Production Manager, SQC Officers, Personnel of Sales Office/ Standard Department (Member Mills)
84	Executive development programme	SITRA	1 week Rs.700/-*	Textile Mills Entrepreneurs, Managing Directors, Managers and Spinning Masters
85	Fabric structure and analysis of man-made fibre fabrics	SASMIRA	6 months (Twice a week) Rs.100/-	Employees from Textile Mills, preferably SSC
86	Filament and blended yarns of man-made fibre	SASMIRA	6 weeks (Twice a week) Rs.150/-	-ditto-
87	Financial controls for textile mills	SITRA	1 week Rs.500/-*	Managing Director, General Manager, Secretary, Administrative Officer, Chief Accountant employed in Member Mills
88	Finishing of man-made textile	SASMIRA	9 weeks (Twice a week) Rs.150/-	Employees from textile mills
89	Getting the best out of winding and warping process	ATIRA	2 days Rs.240/-	Junior Supervisors, Assistants (Member Mills)
90	Improvement in quality of bleached fabrics	ATIRA	2 days Rs.240/-*	Supervisors, Assistants (Member Mills)
91	Inventory control of stores	ATIRA	1 day Rs.120/-*	Purchase Officers, Store Personnel, Cost Accountants (Member Mills)

92	Knitting technology	SASMIRA	3 months (Twice a week) Rs. 300/-	Employees from textile organisations
93	Man-made textiles for executive personnel - Demonstration oriented course in technological aspects	SASMIRA	3 months (Twice a week) Rs. 200/-	Executives from textile organisations working on non-technical capacities preferably graduates
94	Marketing management programme for sales executives in textile industry	SASMIRA	2 days Rs. 350/-	Executives from lower and middle management from textile organizations
95	Market research	SITRA	1 week Rs. 500/-*	Marketing and Sales staff in Textile Mills
96	Office management - refresher course	SITRA	1 week Rs. 400/-	Office Managers, Administrative Officers, Superintendents, Accountants
97	Orientation in market research	SASMIRA	4 weeks (Twice a week) Rs. 200/-	Executives having marketing back-ground
98	Personnel management - refresher course	SITRA	1 week Rs. 400/-	Labour Welfare Officers and Personnel Officers
99	Personnel management - training in	SITRA	3 months As per Govt. of India regulations	Sponsored trainees under special Commonwealth African Assistance Plan.
100	Personnel records and procedures	SITRA	1 week Rs. 400/-	Administrative Officers, Personnel Officers, Labour Welfare Officers & Head Time Keepers
101	Processing of polyester cotton blend fabrics	ATIRA	2 days Rs. 240/-*	Supervisors, Assistants (Member Mills)

1	2	3	4	5
102	Production planning	ATIRA	3 days Rs. 360/-*	Sales Executives, Production Executives, Marketing Executives, Cost Accountants (Member Mills)
103	Quality control	SITRA	3 months As per Government of India Regulations	Sponsored trainees with Diploma in Textile under special Commonwealth African Assistance Plan
104	Quality control and Productivity	SITRA	1 week Rs. 400/-*	Supervisory staff with diploma in Textiles & Quality Control. Supervisors with degree in statistics
105	Screen printing of man-made textile	SASMIRA	8 weeks (Twice a week) Rs. 200/-	Employees from textile organisations, preferably S.S.C.
106	Selection and placement in industry	ATIRA	3 days Rs. 360/-*	Those looking after selection, placement, training, evaluation and manpower development functions in mill (Member Mills)
107	Selection of reeds	ATIRA	1 day Rs. 120/-	Supervisors, SQC staff (Member Mills)
108	Socks knitting technology	SASMIRA	4 weeks (Twice a week) Rs. 150/-	Employees from textile organisation, preferably S.S.C.
109	Steam distribution and utilization	ATIRA	$2\frac{1}{2}$ days Rs. 300/-	Engineering supervisors (Member Mills)
110	Supervisory development programme	SITRA	1 week Rs. 400/-*	Supervisory staff employed in Textile Mills
111	Textile costing	ATIRA	3 days Rs. 360/-*	Costing Personnel (Member Mills)

112	Textile mill management - appreciation programme	SITRA	2 weeks Rs.500/-* per we	Managing Directors/General Managers of Textile Corporation and Co-operative Spgs. Mills (Sponsored by Govt. / Member Mills)
113	Textile technology - refresher course	BTRA	Periodic	Candidates sponsored by Member Mills
114	Textile testing	SITRA	1 week Rs.500/-*	Supervisory staff with Diploma in Textile
115	Texturising technology	SASMIRA	8 weeks (Once a week) Rs.150/-	Employees from textile organisations
116	Training of trainers	SITRA	2 weeks Rs.1000/-* per week	Training Supervisors, Trainers
117	Wash and wear finishing of cotton fabrics	ATIRA	2 days Rs.240/-*	Supervisors, Assistants (Member Mills)
118	Water treatment and consumption	ATIRA	$1\frac{1}{2}$ days Rs.180/-*	Engineering/Processing Supervisors (Member Mills)
119	Weaving of man-made fibre fabrics	SASMIRA	4 months (Twice a week) Rs.250/-	Preferably S.S.C.
120	Wet processing of man-made textile - elementary course	SASMIRA	3 months (Twice a week) Rs.200/-	Employees from textile organisations preferably S.S.C.
121	Work study in textiles	SITRA	1 week Rs.500/-*	Supervisory staff - Personnel Officers in Textile Mills
122	Worker's training course in weaving of man-made fibre fabrics (Hindi medium)	SASMIRA	6 months Rs.100/-	Working experience in the field

1	2	3	4	5
WATER DESALINATION				
123	Water desalination	CSMCRI	15 days No fee	Science and Engineering graduates

Fee marked (*) includes course material and refreshment like lunch and tea.

C. AD HOC TRAININGS

Ad-hoc trainings are not regular training courses. They are undertaken as and when there is any specific request for such training from an institution, industry or individual. These trainings usually cover the limited area in which the training is required. In many cases the period and fee depend upon the training required. Such trainings are primarily to meet the individual requirements.

C. AD-HOC TRAININGS

Sl. No.	Title of Course	Institution	Period/Fee	Eligibility
1	2	3	4	5
AERONAUTICS				
1.	Aeronautics and allied subjects			
	a) Aerodynamics of flight vehicles	NAL	Period of training variable. Free of Charge	Engineering and technology post-graduate - as a part of their course, on specific request from institutions.
	b) Aircraft structural analysis and design			
	c) Digital and power electronics			
	d) Instrumentation and control system			
	e) Materials science and technology			
	f) Mathematical sciences			
	g) Propulsion engineering turbo machinery			
MEDICINAL AND AROMATIC PLANTS				
2.	Analysis of ergot sclerotia for its alkaloid content	RRL, Jammu	1 month Rs. 100/-	Sponsored candidates
3.	Cultivation of citronella geranium, palmarosa etc. and distillation of oils	CIMPO South Zonal Centre, Bangalore, RRL, Jammu	5 to 10 days Free of charge	Practical farmers, scientifically oriented entrepreneurs

4.	Cultivation of medicinal and aromatic plants	RRL, Jammu		Sponsored candidates
5.	Cultivation of medicinal and economic plants - citronella, E citriodora, Basil, Dioscorea, Japanese mint, Lemon grass, pepermint, palmarosa and solanum khasianum	RRL, Jorhat	3 to 4 months Free of charge	Farmers sponsored by Govt. organizations
6.	Mentha oil and menthol	NBG	1 week Rs.100/- per head, plus raw materials	Open to all Industries
7.	Modern methods for isolation and characterisation of natural products	RRL, Jammu	-	Sponsored candidates
	BOARD MANUFACTURE			
8.	Straw board and mill board manufacture	RRL, Jammu	20 days Fee Rs.500/- and Rs.250/- for raw material	Sponsored candidates
	CHEMICALS AND ALLIED PRODUCTS			
9.	Estimation of cellulolytic and pectinolytic activities of enzymes.	IJIRA	2 to 4 weeks Free of charge	Sponsored candidates from member organisations
10.	Oxalic acid from forest products	RRL(B)	2 months	M. Tech.
11.	Synthetic cryolite and ammonium fluoride	RRL(B)	2 months	M. Tech.
12.	Testing of oils, varnishes and paints	RRL, Jammu	1-2 months	Sponsored candidates

1	2	3	4	5
	CEMENT AND ALLIED TECHNOLOGY			
13.	Cement and allied technology - different aspects	CRI	Fee variable	Sponsored candidates on specific request
	CIVIL ENGINEERING			
14.	Building techniques	CBRI	Free of charge	Trainees from Govt. Departments and Universities on request.
15.	Highway engineering research	CRRI		Nominees of road construction agencies, Research and Testing Laboratories of States, Post-graduate students and nominees of foreign governments
	DRUGS & PHARMACEUTICALS			
16.	Biological screening techniques	CDRI	Variable as per specific requirement	Sponsored candidates from drug manufacturers, universities, medical colleges and pharmaceutical industries
17.	Experimental pharmacology	RRL, Jammu	3 months Fee negotiable	Sponsored candidates
18.	Specialised assay techniques, use of sophisticated instruments in chemistry/biochemistry.	IIEM		Candidates from research institutions and universities on request
19.	Specialised techniques like pharmacopoeial assays	CDRI	Variable as per specific requirement	Sponsored candidates from drug manufacturers, universities, medical colleges and pharmaceutical industries.

FISHERY				
20.	Fish culture and other aspects of fisheries	RRL, Jammu	1-3 months Rs. 100/- to Rs. 250/- depending upon period	Sponsored candidates
FOOD TECHNOLOGY				
21.	Extension education and nutrition	CFTRI	-	Home Science Colleges and educational institutions on request
22.	Orientation course for educated youth to develop entrepreneurial ability and how to start agro-based food industry.	CFTRI	15 days	Graduates
23.	Setting up of a new food based industries.	RRL, Jammu	2 weeks to 2 months Rs. 250/- to Rs. 1000/- depending upon time	Sponsored candidates
GARDENING				
24.	Gardening	NBG	2 to 4 weeks Free of charge	Open to all
25.	Programmed blooming of chrysanthmum/modern techniques of chrysanthmum culture	NBG	4 to 6 weeks. Free of charge	Open to all
GEOPHYSICS				
26.	Geophysical techniques viz. paleomagnetism, operation of geophysical instruments and survey of ground water and minerals	NGRI	Variable, depends on training required	On request

1	2	3	4	5
	GLASS AND CERAMICS			
27.	Glass blowing	i) NCL	Depends on training required	Matriculate
		ii) NPL	-	On request
		iii) CDRI	Variable	On request from Government organisations
28.	Glass; ceramics; refractories; enamels and analytical chemistry of silicate	CGCRI	15 days to 6 months Rs. 300/- Fee. Rs. 2000/- Deposit for practical training	Graduates in Physical Sciences/ Engineering/Technology sponsored candidates
	INFORMATION SCIENCE			
29.	Documentation, translation and reprography.	INSDOC	Variable	Occasional Course. Announcement made in Advance
30.	Library and information	INSDOC	Variable	On specific request
	INSTRUMENTATION			
31.	Instrumentation, spectroscopy (IR & UV)	IIEM	-	Candidates from research institutions and universities on request
32.	On-the-job training in instrumentation	CSIO	A few weeks	On specific request from universities/industry and engineering colleges
33.	Spectroscopic (IR, NMR, Mass) and microanalysis	CDRI	Variable as per specific requirements	Candidates sponsored from universities, medical colleges and pharmaceutical industries
34.	Testing and servicing of instruments - jute industry	IJIRA	No charge	Sponsored candidates from member mills

35.	Use of sophisticated instruments viz Transmission Electron Microscope, Scanning Electron Microscope, Atomic Absorption Spectrophotometer, Liquid Scintillation Counter, Polygraph etc.	CDRI	Variable as per specific requirement	Sponsored candidates from Universities, medical colleges and pharmaceutical industries
	LEATHER TECHNOLOGY			
36.	Analysis and evaluation of vegetable tanins	RRL Jammu	1 month Rs. 200/-	Sponsored candidates
37.	Curing and preservation of skins	RRL Jammu	1 week Rs. 50/-	Sponsored candidates
38.	Dyeing and finishing of leathers	CLRI	2 to 3 months	Sponsored candidates
39.	Fabrication of various articles from fur and sheep-skin.	RRL Jammu	15 days Rs. 200/-	Sponsored candidates
40.	Laboratory analytical techniques and other aspects relating to leather industry.	CLRI	3 months Rs. 400/-	On specific request s
41.	Maintenance of tanning machinery	CLRI	2 to 3 months	Spnnsored candidates
42.	Manufacture of plain suedes from sheep and goat skins.	RRL Jammu	1 month Rs. 300/-	Sponsored candidates
43.	Operation of tanning machinery	CLRI	2 to 3 months	On specific request
44.	Quality control and standardization in leather industry -	CLRI	2 to 3 months	Sponsored candidates

1	2	3	4	5
45.	Shop-floor level supervisory training	CLRI	2 to 3 months fees variable	Sponsored candidates
46.	Vegetable tanning of sheep and goat skins.	RRL Jammu	1 month Rs. 200/-	Sponsored candidates
	MECHANICAL ENGINEERING			
47.	Fabrication technique of process equipment	RRL, Jammu	3 months Fee negotiable	Degree/Diploma in mechanical engineering
48.	Non-destructive testing, ultrasonic testing methods, chemical analysis-job training	MERADO, Poona	3 to 4 weeks. Rs. 125/- per week	Sponsored candidates
	METALS AND MINERALS			
49.	Ore dressing cum-mineral beneficiation; material science technology; alloy development; ferrous and non-ferrous metallurgy; metal working; melting and casting; foundry; corrosion of metals; refractories and metallurgical engineering	NML	1 to 10 weeks. Free of charge	Sponsored candidates
50.	Iron making through two alternate routes each	RRL(B)	1 1/2 months. Free of charge	Lecturer from Engineering Colleges
51.	Physico-chemical properties of minerals and beneficiation and upgrading of clay, bauxite and gypsum.	RRL Jammu	1-2 months	Sponsored candidates

MINING

52.	Mine gas analysis; Mine dust analysis; gas chromatography; maintaining methane testing device; repair and overhauling of exploders	CMRS	1 to 3 weeks. Rs. 100 per week	Sponsored candidates on specific request

MUSEOLOGY

53.	Exhibition on achievement of an R & D institute	BITM	10 days	Personnel of CSIR Laboratories/Institutes who are engaged in setting up or are intending to set up industrial exhibition units for the Laboratories.
54.	Museum display, silk screen printing	BITM	7-10 days	Trainees from CSIR Laboratories/Institutes.
55.	Training facilities in museum studies for foreigners.	BITM	1-3 months	Personnel of foreign museums

PLANT PROTECTION

56.	Insect pests of economic crops.	RRL Jammu	1-2 months Rs. 50/- to 75/- depending upon period.	Sponsored candidates
57.	Isolation, identification and control of diseases caused by fungi, bacteria, virus and nemadotes	RRL Jammu	1-3 months Rs. 100 to 300/- depending upon period	Sponsored candidates

1	2	3	4	5
	PUBLICATION AND INFORMATION			
58.	Editorial practices in and production of Scientific journals, encyclopaedia, monographs and reports	PID	3-7 days	Information and editorial staff from CSIR Laboratories
	SCIENCE POLICY AND PLANNING			
59.	Science policy and planning	Planning Group CSIR	3 weeks	-
60.	Project planning and budgeting system	Planning Group CSIR	1 week	-
61.	Documentation and Information analysis, country report etc.	Planning Group CSIR	1 week	-
	STRUCTURAL ENGINEERING			
62.	Design and construction techniques	SERC	Period variable. No fee.	Trainees from Government departments, Universities, polytechnics, and developing countries on request
	TEXTILE TECHNOLOGY			
63.	Analytical testing of man-made textiles	SASMIRA	1 to 4 weeks	Sponsored candidates preferably graduates
64.	Appreciation programme for Trade Union Leaders	SITRA	3 days Rs. 100/- per batch of 25 participants	Recognised Trade Union Leaders from member Textile Mills.

65.	Quality control, physical testing and chemical testing	BTRA	ad-hoc	Sponsored candidates
66.	Textile testing method	IJIRA	Free of charge	Sponsored candidates from Member mills
67.	Warp knitting technology	SASMIRA	1 to 4 weeks	Sponsored candidates Preferably graduates
68.	Weaving of man-made fibre fabrics	SASMIRA	1 to 4 weeks	Sponsored candidates preferably graduates
69.	Wet processing of man-made textiles	SASMIRA	1 to 4 weeks	Sponsored candidates preferably graduates

INDEX

Title	Number
Aerodynamics of flight vehicles	C-1
Aeronautics	C-1
Agrob ased food industries	C-22
Aircraft structure, analysis and design	C-1
Air pollution	B-24
Alloy development	C-49
Amm.onium. fluoride	C-11
Analysis -	
aircraft structures	C-1
n.an made fibre fabrics	B-85
metals	C-48
micro	C-33
m.ine dust	C-52
mine gas	C-52
pesticide residue	B-41
textiles	B-72, C-65
vegetable tanins	C-36
Analytical chemistry of silicates	C-28
Analytical techniques, leather industry	C-40
Aromatic plants, cultivation of	C-4
Automobile engines, utilisation of fuel, and lubricants	B-63
Bacteria, diseases caused by	C-57
Baking technology	B-36
Basil, cultivation of	C-5
Bauxite, upgrading of	C-51
Beneficiation of -	
coal	B-17
minerals	C-49, 51
Blended yarn, man m.ade fibre	B-86
Boards, mill and straw	C-8
Budgeting system	C-60
Building techniques	C-14
Carbonisation of coal	B-18
Casting of metals	C-49
Cement -	
clinker based cements	B-13
raw material technology	B-11
technology	C-13
Cement industry -	
preventive maintenance	B-9
refractory practices	B-12
Cement plant -	
chemical analysis and quality control	B-1
energy conservation in	B-6
geological and raw material investigation	B-7
mining practices	B-7
process control and instrumentation	B-10
structures	B-3
Ceramics and glass	C-28
Chemical analysis, cement plant	B-1
Chemical technology	A-1, 2
Chemistry	A-1, 2
Chemistry, man m.ade textiles	A-15
Chromatography, gas	C-52
Chrysanthmum culture and programm.ed blooming	C-25
Citronella, cultivation and distillation	C-3, 5
City refuge disposal	B-25
Clays - upgrading of	C-51
Clinker based cement	B-13
Coal -	
beneficiation	B-17
carbonisation	B-18
sam.pling and analysis	B-19
Cold storage of perishable products	B-33
Computation, digital	B-69
Concrete -	
durability in industrial structures	B-5
limit state design in concrete technology	B-8
making materials, testing and analysis	B-2
structures in cement plants	B-3
technology	B-4

Construction techniques C-62
Control system and instrumentation C-1
Corrosion B-21 and C-49
Cotton selector training E-81
Count variation, textiles E-76
Country report C-61
Creative ability centre B-57
Crops, insect pests C-56
Cryolite, synthetic C-11
Cultivation of -
- aromatic plants C-4
- basil C-5
- citronella C-3, 5
- dioscorea C-5
- E citriodora C-5
- geranium C-3
- Japanese mint C-5
- lemon grass C-5
- medicinal plant C-4
- mushroom B-34
- palmarosa C-3, 5
- pepper mint C-5
- solanum khasianum C-5

Culture, fish C-20
Curing and preservation of skins C-37
Data processing, textile B-83
Desalination B-123
Design and construction technique C-62
Digital and power electronics C-1
Digital computation B-69
Dimentional metrology B-52, 53
Dioscorea, cultivation of C-5
Diseases caused by fungi, bacteria, virus and nematodes, identification and control C-57
Distillation of
- citronella C-3
- geranium C-3
- palmarosa C-3

Documentation and reprography A-9 C-29 and C-61
Drugs and pharmaceuticals -
- assay techniques C-18
- biological screening techniques C-16
- experimental pharmacology C-17
- pharmacopoeial assay C-19

Dyeing of -
- leather C-38
- man made fibre blend B-82
- wool A-14

E. citriodora, cultivation of C-5
EDTA and spectrophotometric technique B-45
Editorial practices C-58
Electronics, industrial A-11
Electroplating B-22
Enamels C-28
Energy conservation, cement plant B-6
Engineering -
- highway B-14, 15
- metallurgical C-49
- propulsion C-1
- structural B-69
- traffic B-16

Environmental microbiology B-26
Enzymes C-9
Equipment fabrication technique C-47
Ergot sclerotia and its alkaloids - analysis C-2
Evaluation, material B-55
Exhibition of achievements of R & D C-53
Exploders, repair and overhauling C-52
Extension education, food C-21
Fabrics, bleached B-90
Fabric structure, man-made fibre fabrics B-85
Ferrous and non-ferrous metallurgy C-49
Filament, man made fibre B-86
Fishery C-20
Fish -
- culture C-20
- processing B-35

Flight vehicles, aerodynamics of C-1
Flour milling B-36
Food -
- cold storage of perishable products B-33
- extension education and nutrition C-21
- food based industries C-23
- food industries - analysis, standardisation and quality control B-32
- food industries, agrobased C-22

- infestation control and pesticide residue analysis B-41
- microbiology B-37
- packaging B-38
- protein foods B-44
- science A-1, 3
- technology A-3

Foundry C-49
Fruit and vegetable technology B-39
Fruit preservation B-40
Fuels and lubricants, utilisation in automobile engines B-63
Fungi, diseases caused by C-57
Fur and sheep skin - fabrication of various articles C-39

Gardening C-24
Gas chromatography C-52
Gasification B-20
Gas purification B-20
Geophysical techniques C-26
Geranium - cultivation and distillation C-3
Glass C-28
Glass blowing C-27
Goat and sheep skin -
- manufacture of plain suede C-42
- vegetable tanning of C-46

Gypsum - upgrading of C-51

Highway engineering B-14, 15
Highway engineering research C-15
Humidity control, textiles B-77

Industrial and social psychology A-1
Industrial electronics A-11
Industrial testing B-54
Infestation ctonrol B-41
Information C-30
Information analysis C-61
Insect pests of economic crops C-56
Instrument -
- technology A-10
- testing and servicing C-34
- use of sophisticated instruments C-18, 35

Instrumentation C-31, 32
Instrumentation, cement plant B-10
Iron making C-50

Japanese mint, cultivation of C-5

Knitting technology B-92
Knitting technology, socks B-108

Leather -
- dyeing and finishing C-38
- machinery, maintenance of B-46
- practical training in manufacture B-47, 48
- specialised course B-49
- technology A-1, 4 & 8
- vacation programme B-50

Leather industry -
- quality control and standardisation C-44
- laboratory analytical technique C-40
- shop-floor level supervisory training C-45

Lemon grass, cultivation of C-5
Library C-30
Lubricants, utilisation in automobile engines B-63
Lubrication, Industrial B-61

Machinery maintenance, leather B-46
Machinery, tanning C-41, 43
Management -
- manmade textiles A-19
- office B-96
- personnel B-98, 99
- production B-56
- textiles A-18
- textile mill B-112

Man-made fibre, filament and blended yarn B-86
Man-made fibre blends, dyeing of B-82
Man-made fibre fabrics -
- fabric structure and analysis B-85
- market research B-97
- texturing technology B-115
- weaving of A-21 B-119, 122 C-68

Man-made textiles -
- analytical testing of B-73, C-63
- basic marketing B-74
- chemistry A-15
- for executive personnel B-63
- finishing of B-88

management and marketing A-19
screen printing B-105
technology A-16
warp knitting of A-20, C-67
weft knitting of A-22
wet processing A-23, 24, B-120, C-69

Marketing -
management, textiles B-94
man-made textiles A-74
textiles A-17

Market research -
man made fibre fabrics B-97
textiles B-95

Material science technology C-1, 49
Material evaluation and testing B-55
Mathematical sciences C-1
Meat and poultry products, processing and quality control B-42
Medicinal plants, cultivation of C-4
Mentha oil C-6
Menthol C-6
Metals -
casting of metals C-49
chemical analysis C-48
working C-49

Metallic wire card clothing, correct grinding B-78
Metallurgical engineering C-49
Metallurgy, ferrous and non-ferrous C-49
Methane testing device, maintenance of C-52
Metrology, dimentional B-52, 53
Microbiology -
environmental B-26
food B-37
Micro analysis C-33
Mill board C-8
Milling, flour B-36
Mine dust analysis C-52
Mine gas analysis C-52
Minerals -
beneficiation and ore dressing C-49, 51
physico-chemical properties C-51
Mining practices -
cement plant B-7

Mixed salt, recovery of B-67
Mass and length, precision measurement B-64
Museum studies A-13, C-55
Museum display C-54
Mushroom, cultivation of B-34
Natural products, modern methods of isolation and characterisation C-7
Nematodes, diseases caused by C-57
Non-destructive testing methods C-48
Non-ferrous and ferrous metallurgy C-49
Nutrition C-21
Oils, testing of C-12
Ore dressing and mineral beneficiation C-49
Oxalic acid C-10
Overhauling and repair of exploders C-52
Packaging B-38
Paints, testing of C-12
Palmarosa, cultivation and distillation C-3, 5
Pepper mint, cultivation of C-5
Petro-chemicals B-62
Petroleum refining B-62
Pesticide residue analysis B-41
Pharmaceuticals and drugs -
assay technique C-18
biological screening technique C-16
experimental pharmacology C-17
pharmacopoeial assay C-19
Physics B-65
Physics, textile A-1
Physico-chemical properties of minerals C-51
Planning, project C-60
Planning, project C-60
Planning, urban transportation B-16
Plywood technology B-66
Polyester cotton blend fabrics B-101
Poultry and meat products B-42
Power and digital electronics C-1
Practice school programme A-12
Preservation of -
fruits B-40
skins C-37
Preventive maintenance, cement B-9

Process control, cement plant B-10
Processing of fish B-35
Production management B-56
Production planning, textile B-102
Productivity, textile B-104
Project planning C-60
Propulsion-engineering turbo machinery C-1
Protein foods from oilseeds and pulses B-44
Purification of gas B-20
Quality control, textile B-103, 104
C-65
salt B-68
R&D, exhibition of achievements C-53
Raw material investigation, cement plant B-7
Reeds selection, textile B-107
Refining, petroleum B-62
Refractories C-28, 49
Refractory practices in cement industry B-12
Refuge disposal, city B-25
Repair and overhauling of exploders C-52
Reprography and documentation A-9
C-29
Rice technology B-43
Salt, improvement in
quality and yield B-67
quality control B-68
Sampling and analysis, coal B-19
Science A-1, 6
Science -
food A-1 & A 3
mathematical C-1
tea A-1
Science apparatus, improvisation of B-58
Science policy and planning C-59
Screen printing B-105, C-54
Servicing of instruments C-34
Sewage farming B-30
Sheep skin and fur
fabrication of various articles C-39
Sheep and goat skin -
manufacture of plain suedes C-42
vegetable tanning of C-46
Silicates, analytical chemistry C-28
Skins, curing and preservation C-37
Social psychology A-1
Socks knitting technology B-108
Solanum khasianum, cultivation of C-5
Spectrophotometric technique B-45
Spectroscopy C-31, 33
Standardisation -
food industries B-32
leather industry C-44
Steam distribution and utilisation, textile B-109
Storage battery technology B-23
Straw board C-8
Structures, cement plant B-3
Structural engineering B-69
Synthetic cryolite C-11
Tanning machinery -
maintenance of C-41
operation of C-43
Tanins, vegetable, analysis and evaluation C-36
Teachers training programme B-59
Tea husbandry and technology B-70
Tea science A-1
Tea, vegetative propagation of B-71
Techniques -
analytical in leather industry C-40
design and construction C-62
EDTA and spectrophotometric B-45
equipment fabrication C-47
geophysical C-26
Technology -
baking B-36
cement C-13
cement raw materials B-11
chemical A-1, 2
concrete B-4
food A-3
fruit and vegetables B-39
instruments A-10
knitting B-92, 108
leather A-1, 4, 8
man made fibre fabric texturing B-115
man made textiles A-16
material science C-1, 49
plywood B-66
rice B-43
storage battery B-23
tea B-70

textiles A-1, 7
B-113
welding B-51
Temperature control, textiles B-77

Testing -
concrete B-2
industrial B-54
instruments C-34
man made textile B-73, C-63
materials B-55
non-destructive C-48
oils C-12
paints C-12
textiles B-72, 114 C-66
ultrasonic C-48
varnishes C-12

Textile -
appreciation programme for Trade Union Leaders C-64
bleached fabrics, improvement in quality B-90
chemical analysis and testing B-72 C-65
control of count variation B-76
control of temperature and relative humidity B-77
correct grinding of metallic wire card clothing B-78
costing B-79, 111
cost reduction B-80
cotton selector training B-81
electronic data processing B-83
executive development programme B-84
financial controls for textile mills B-87
getting the best out of winding and warping process B-89
inventory control of stores B-91
management A-18, 19
marketing A-17, 19
marketing management programme B-94
market research B-95, 97
mill management B-112
office management B-96
personnel management B-98, 99
personnel records and procedures B-100
physics A-1
polyester-cotton blend fabrics B-101
production planning B-102
productivity B-104
quality control B-103,104 C-65
Selection and placement in industry B-106
selection of reeds B-107
steam distribution and utilisation B-109
supervisory development programme B-110
technology A-1, 7 B-113
testing B-114 C-66
textile and clothing A-5
training of trainers B-116
wash and wear finishing B-117
water treatment and consumption B-118
weaving defects, causes and remedies B-75
work study B-121

Traffic engineering B-16
Translation C-29
Turbo machinery C-1

Ultrasonic testing methods C-48
Upgrading of -
bauxite C-51
clay C-51
gypsum C-51

Urban transport planning B-16

Varnishes, testing of C-12
Vegetables and fruits technology B-39
Vegetable tanins, analysis and evaluation C-36
Vegetable tanning of sheep and goat skin C-46
Vegetative propogation of tea B-71
Virus, diseases caused by C-57

Warp knitting A-20 C-67
Warping process, textile B-89
Wash and wear finishing, textile B-117

Waste treatment B -27, 29
Water and waste water analysis B-31
Water desalination B -123
Water treatment and consumption, textile B -118
Weaving defects, textiles B-75
Weaving of, man made fibre fabrics A-21, B -119, 122 C-68
Weft knitting A-22
Welding technology B-51
Wet processing, man made textiles A -23, 24 B-120 C-69
Winding process, textile B-89
Wool, dyeing and finishing of A-14
Work education training programme B-60
Work study, textile B -121